

AMENDMENTS TO THE CLAIMS

I claim:

1. (Currently amended) A wiring network for a structure having a composite fabrication assembly made of a plurality of layers of composite materials for connecting components outside of the structure for sending and receiving transmittable information between the components, the wiring network comprising:
 - a. a plurality of nonwoven conductive conduits placed between layers of the assembly, each having opposite ends;
 - b. a first and a second gateway connected to opposite ends of each conduit and positioned to select one of the conduits for communication between the gateways; and
 - c. means for controlling selecting one of the conduits from the plurality of nonwoven conductive conduits responsive to failure of a previously selected one of the plurality of conductive conduits to for directing transmittable information over the selected conduit to thereby provide continued communication between the first and the second gateway.
2. (Currently amended) The wiring network of claim 1, wherein the first gateway is connected to a first controller and a first component, wherein the second gateway is connected to a second controller and a second component, wherein the plurality of nonwoven conductive conduits is a first and a second plurality of conductive conduits, wherein the first plurality of conductive conduits provides communication between the first controller and the second component and the second plurality of conductive conduits provides communication between the second controller and the first component, and wherein the means for controlling selecting one of the conduits from the plurality of conductive conduits includes means for controlling selecting a first one of the conduits from the first plurality of conductive conduits responsive to failure of a previously selected one of the first plurality of conductive conduits to direct transmittable information over the first selected conduit and means for controlling selecting a second one of the conduits from the second plurality of conductive conduits responsive to failure of a previously selected one of the second plurality of conductive conduits to direct transmittable

information over the second selected conduit to thereby provide further including multiple component specific continued communication conduits between the gateways and a specific component.

3. (Currently amended) The wiring network of claim 1, wherein the first gateway is a computer-controlled selector bus, wherein the plurality of nonwoven conductive conduits is a first plurality of nonwoven conductive conduits, wherein the means for controlling selecting includes a wiring computer, and wherein the wiring network further comprises:

 a second plurality of nonwoven conductive conduits placed between the layers of the assembly, each having opposite ends;

 a third and a fourth gateway connected to opposite ends of each of the second plurality of conduits, the third gateway a computer-controlled selector bus connected to the wiring computer and positioned to select one of the conduits of the second plurality of conduits for direct communication between the third, fourth, and first gateways; and wherein

 the wiring computer controls selecting one of the conduits of the second plurality of conduits positioned between the third and the fourth gateways to maintain control of the first gateway.

4. (Currently amended) The wiring network of claim 1, wherein the layers of the assembly are of a separate fabric layers made of woven, high-strength fibers, impregnated with resin.

5. (Currently amended) The wiring network of claim 1, wherein each of said gateways is a selector bus positioned to select one of the conduits from the plurality of nonwoven conductive conduits to receive information from an end component conduit connected to the respective selector bus.

6. (Currently amended) The wiring network of claim 1, wherein each gateway is placed between the layers of the assembly with the respective conduit end attached to the gateway within the layers of the assembly, the gateway further including a terminal for connecting a component to the gateway externally of the layers of the assembly.

7. (Previously presented) The wiring network of claim 1, wherein said means for controlling selecting includes a programmable server.
8. (Currently amended) The wiring network of claim 7, wherein multiple conduits between gateways are associated with each externally connected component and wherein the server is adapted for selecting any of thea plurality of conduits for transmitting information between the first and the second gateways to selected components.
9. (Original) The wiring network of claim 8, wherein the selection of conduits is based on a predetermined hierarchy.
10. (Original) The wiring network of claim 9, wherein the hierarchy is adapted for selecting the conduit of least resistance.
11. (Original) The wiring network of claim 9, wherein the hierarchy is adapted for selecting the shortest conduit between selected components and related gateways.
12. (Original) The wiring network of claim 7, further including a conduit selector on each gateway.
13. (Original) The wiring network of claim 1, wherein said structure comprises a vehicle having a central control center and a plurality of components located remotely from the central control center and controlled from the central control center, and wherein at least one gateway is accessible by the control center and at least another gateway is accessible by each of the remote components.
14. (Previously presented) The wiring network of claim 13, wherein the vehicle comprises an aircraft having a cockpit, the means for controlling selecting being located in the cockpit and connected to the first gateway and a remote component being located outside the cockpit and connected to the second gateway.

15. (Currently amended) A wiring system for an aircraft comprising an outer structure having a composite fabrication assembly made of a plurality of layers of composite materials for connecting components outside of the structure for sending and receiving transmittable information between the components, the wiring system comprising:

- a. a plurality of nonwoven conductive conduits placed between layers of the assembly, each having opposite ends;
- b. first and second gateway means connected to opposite ends of each of the conduits for selecting one of the conduits for communication between the gateway means; and
- e. means for controlling selecting one of the conduits from the plurality of nonwoven conductive conduits responsive to damage to a previously selected one of the plurality of nonwoven conductive conduits to for selecting and directing the transmittable information over the selected conduit to thereby provide continued communication between the first and the second gateway.

16. (Previously presented) The wiring system of claim 15, wherein the aircraft includes a cockpit, wherein the wiring system further includes a controller located in the cockpit and connected to the first gateway means, and wherein one of the components is located outside of the cockpit and connected to the second gateway means.

17. (Currently amended) The wiring system of claim 15, wherein said means for controlling selecting includes a computer, and wherein the layers of composite materials are separate of a fabric layers made of woven, high-strength fibers, impregnated with resin.

18. (Currently amended) A wiring system for an aircraft comprising an outer structure having a composite fabrication assembly made of a plurality of layers of composite materials for connecting components adjacent the structure for sending and receiving transmittable information between the components, the wiring system comprising:

- a. a plurality of nonwoven conductive conduits placed between layers of the assembly, each having opposite ends;

- b. a first and a second gateway connected to opposite ends of each of the conduits and positioned to select one of the conduits for communication between the gateways; and
- e. a server electrically or optically connected to at least one of the gateways and positioned to instruct the at least one of the gateways to select one of the conduits from the plurality of nonwoven conductive conduits to carry transmittable information over the selected conduit.

19. (Previously presented) The wiring system of claim 18, wherein the one of the conduits is a first conduit, wherein the at least one of the gateways is a first and a second gateway, and wherein the server determines the condition and usage of each of the plurality of conduits between the first and second gateways and instructs the gateways to select a second conduit when the server determines the first conduit to be unusable.

20. (Currently amended) The wiring system of claim 19, wherein the aircraft includes a cockpit, wherein the wiring system further includes a cockpit controller located in the cockpit and connected to the first gateway, wherein one of the components is located outside of the cockpit and connected to the second gateway, and wherein the layers of composite materials are of a separate fabric layers made of woven, high-strength fibers, impregnated with resin, wherein the plurality of nonwoven conductive conduits is positioned between first and second fabric layers.